



Use of ESDU Data at UK Universities

Introduction

ESDU data has been used in UK Universities for many years, and has tended to be employed in specific project work by small pockets of users in special departments.

University of Bath Department of Mechanical Engineering

The university has a thriving Aeronautical Engineering course that is heavily involved in research and liaison with some of the UK's leading aerospace companies. ESDU data is introduced to students throughout their degree courses and is regarded as a key tool for project work for final year students. Data is used for a final year degree project where students have to design an aircraft from first principles for a particular activity, eg. unusual freight or concept passenger transport.

They are encouraged to liaise with aircraft builders such as BAE Systems and engine builders such as Rolls Royce and GE. Consideration must also be given to other components of the aircraft as appropriate. The use of ESDU data in this context shows students that a definitive, non-biased source is available to help with the issues of sizing and specifying the fundamentals of the aircraft in question. An example of the use of data might be to define positioning and required power of the engines.

University of Bristol Department of Aeronautical Engineering

The University of Bristol is renowned as a leading aerospace university. Its graduates, like Bath, are in strong demand within the industry. ESDU data is incorporated into course-work, showing how real life situations are compared with theory within aircraft design. It is emphasized that there are many techniques within ESDU data that have come from the design process used by major aircraft manufacturers. The same data is fed back into the design of new and modified aircraft. It is also shown that simply going back to original theory is not as effective as using

validated proven data - the saving in time and effort alone underlines this.

One user quoted that ESDU data gives '...an amalgam of wisdom from industry'. Specific data is referenced in lectures, particularly regarding Aerodynamics and Performance series. Examples are in control surface coefficients, wing body combinations, tail effects (thin/ horizontal) and derivatives. From the Structures series an example of ESDU usage includes stiffened plates and stringers. Fatigue, Dynamics and MMDH series are also frequently referenced. Where aircraft design projects are undertaken, specific data items will be referenced by lecturers and students, and included in the reports written by students.

General

It is interesting to note that where universities use ESDU data, only certain selected areas have been extensively used. The advent of the electronic version of the data has highlighted to universities that there are many other uses for the data. This means that nearly all engineering courses can apply varying amounts of data to their work.

Of the two universities mentioned, one (Bath) subscribes to the whole of ESDU via CHEST through internet access, and the other (Bristol) subscribes to several series on paper and is considering moving to the CHEST scheme.

Part of the subscription to ESDU includes support and training from ESDU engineers and staff. It is an essential part of the ESDU role to ensure that university subscribers are trained such that they can most effectively use and gain value from the ESDU data. Therefore ESDU provides a tailor-made training, awareness and discussion programme and access to its engineers based in London.

As with any information source, it is necessary to increase knowledge to show broadly what is covered by the source. This is certainly true of ESDU since even experienced engineers might not be fully aware of the scope of the ESDU data to which they have access. Hence the need for continuous assistance from ESDU is essential.